Summary of Tests for Series of Constant Terms $\sum_{n=1}^{+\infty} U_n$

CONVERGENT $\sum U_n$	DIVERGENT $\sum U_n$
	$\lim_{n\to+\infty} U_n \neq 0$
Geometric Series $s = \dfrac{a}{1-r}$ $\quad \sum_{n=1}^{+\infty} ar^{n-1}$ where $\lvert r\rvert < 1$	Geometric Series $\sum_{n=1}^{+\infty} ar^{n-1}$ where $\lvert r\rvert \geq 1$
p-series $\sum_{n=1}^{+\infty} \dfrac{1}{n^p}$ where $p > 1$	p-series $\sum_{n=1}^{+\infty} \dfrac{1}{n^p}$ where $p \leq 1$ (harmonic series when p=1)
Alternating series for which $\lim_{n\to+\infty} U_n = 0$ and $\lvert U_{n+1}\rvert < \lvert U_n\rvert$	
Ratio Test: $\lim_{n\to+\infty} \left\lvert \dfrac{U_{n+1}}{U_n} \right\rvert = L < 1$ (absolute convergence) Inconclusive	Ratio Test: $\lim_{n\to+\infty} \left\lvert \dfrac{U_{n+1}}{U_n} \right\rvert = L > 1$ or $= +\infty$ if L = 1
Root Test: $\lim_{n\to+\infty} \sqrt[n]{\lvert U_n\rvert} = L < 1$ (absolute convergence) Inconclusive	Root Test: $\lim_{n\to+\infty} \sqrt[n]{\lvert U_n\rvert} = L > 1$ or $= +\infty$ if L = 1
Comparison Test (positive terms): $U_n \leq V_n$ where $\sum_{n=1}^{+\infty} V_n$ is a known convergent series.	Comparison Test (positive terms): $U_n \geq V_n$ where $\sum_{n=1}^{+\infty} V_n$ is a known divergent series.
Limit Comparison Test (positive terms): $\left.\begin{array}{l}\lim_{n\to+\infty} \dfrac{U_n}{V_n} = C > 0 \\ \text{or } = 0\end{array}\right\\}$ and $\sum_{n=1}^{+\infty} V_n$ converges	Limit Comparison Test (positive terms): $\lim_{n\to+\infty} \dfrac{U_n}{V_n} = C > 0$ or $= +\infty$ and $\sum_{n=1}^{+\infty} V_n$ diverges
Integral Test (positive terms): $U_n = f(n)$, f continuous, $f > 0$, decreasing and $\int_1^{\infty} f(x)dx$ converges	Integral Test (positive terms): $U_n = f(n)$, f continuous, $f > 0$, decreasing and $\int_1^{\infty} f(x)dx$ diverges
Differs from a known convergent series only in first m terms.	Differs from a known divergent series only in first m terms.
$\sum_{n=1}^{+\infty} U_n = \sum_{n=1}^{+\infty} CV_n$ where $C \neq 0$ constant and $\sum_{n=1}^{+\infty} V_n$ known convergent	$\sum_{n=1}^{+\infty} U_n = \sum_{n=1}^{+\infty} CV_n$ where $C \neq 0$ constant and $\sum_{n=1}^{+\infty} V_n$ known divergent
Sum of two convergent series (term by term)	Sum of a divergent series and a convergent series.